The University of Iowa
Principles of Chemistry II
Summer 2015

Professors: Dr. Travis Owen
Office: E124F CB
Office Hours: Tues. 4:30 PM–6:00 PM, Thu. 10:50 AM–12:20 PM or by appointment (Office Hours held in E258 CB)
Phone: (319)471-7951 – Please feel free to text short questions
e-mail: travis-owen@uiowa.edu

Course Objectives
Principles of Chemistry II is a General Education-approved course in the natural sciences. It is the second semester of a two-semester course sequence (CHEM 1110/1120) that provides students with a broad overview of the Chemical Sciences and its relevance to contemporary society. Through participation in course activities, each student will improve her/his knowledge of chemistry and the scientific method, strengthen problem-solving skills, learn to communicate in a scientific manner, and gain laboratory experience (Chemistry is first and foremost an experimental science) that are relevant to scientific and medical careers, other areas with scientific aspects (e.g., engineering, patent law, environmental policy), and being an informed citizen.

Course Structure and Instructors
Chem 4:012 consists of five components each with different instructors and scheduling. Attendance is expected at all five components of the course.
(1) Lecture: Professor Owen
(2) Discussion Sections: Will Marquardt (TA)
(3) Case Study: Professor Owen
(4) Laboratory: 0010 Chengxuan Guo (TA); 0011 Kamal Kanti Ray (TA)
(5) Exams: Professor Owen

Lecture M – Th, 12:30–1:45 PM W268 CB

Discussion Section
Discussion Sections are limited to 24 students and are a complement to lectures. Each section meets twice a week. Students ask questions and obtain problem-solving experience. For meeting times and room assignments see ISIS.

Case Study
Activities for credit are conducted during Case Study periods. Case Study is held on Monday 10:00–11:20 AM in W228 CB

Laboratory
Lab sections will meet the first week of classes for safety training and completing safety quiz

Experiment: Experiments provide students with hands-on experience concerning selected course topics. For meeting times and room assignments see ISIS.

Safety: Students must always comply with laboratory safety rules. Students must complete laboratory safety training and pass a safety quiz before they will be allowed to perform lab experiments. If a student fails to comply with laboratory safety rules, the student will be asked to leave the laboratory and points will be deducted.
Pregnancy: Many chemicals pose potential hazards to a fetus or young child. Women who are pregnant, nursing, or who expect to become pregnant are strongly advised to consult with their physician about the hazards of possible exposure to chemicals used in this course. MSDS and other information are available.

**TA Office Hours**
Discussion and Laboratory Section teaching assistants (TAs) have scheduled office hours (in E208). They will be announcing these during their first meeting with you and are available below:

<table>
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<tr>
<th>Will Marquardt</th>
<th>Chengxuan Guo</th>
<th>Kamal Kanti Ray</th>
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<tbody>
<tr>
<td>T and F: 11:30–12:30 PM</td>
<td>M: 1:30–2:30PM</td>
<td>M: 1:30–2:30PM</td>
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<td>W: 2:30–3:30PM</td>
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**Course Content and Prerequisites**
Content: properties of solutions, chemical kinetics, nuclear chemistry, aqueous equilibria, chemical thermodynamics, electrochemistry, chemistry of the representative elements, coordination compounds, and organic chemistry.

**Prerequisites:** CHEM: 1110 – Principles of Chemistry I, or its equivalent.

**Course Materials**
*MasteringChemistry* (required software)
*Lab Notebook (w/ carbonless copy pages) and laboratory goggles* (required)
*Case Study / Lab Experiment Manual (Posted on ICON)* (required)

**Course Websites (Lecture & Lab)**
CHEM: 1120 – Iowa Courses Online (ICON) website URL = http://icon.uiowa.edu/
Use your Hawk ID and Hawk ID password to log in to ICON. Course announcements, Laboratory materials, homework and other information will be posted on ICON, so students are encouraged to check ICON frequently during the semester.

**Online Homework**
*MasteringChemistry* is an Internet-based software package that helps improve problem-solving skills and concept understanding. *MasteringChemistry* website:

**Groups**
This fast-paced course will include a significant amount of group work in case study, laboratory, and lecture. Students will be forming permanent groups consisting of four students in which to work together throughout the entirety of the semester. Groups will be used to complete laboratory, complete case study activities, complete quizzes, and other activities as the semester progresses. Groups will be formed the first day of class. Any problems/concerns with other group members should be brought to the attention of Prof. Owen.

**Course Administration**
Go to Room E225 CB in the Chemistry Center (phone: 335-1341; e-mail: chemcenter@uiowa.edu) for drop/add signatures, make-up laboratory and exam scheduling, course handouts, alternate textbooks, section changes, or tutor lists. Hours are M-F, 8:00-12:00 & 1:00-4:30.
Special Needs
Students with disabilities requiring modification of seating, testing, or other course arrangements should first contact the Office of Student Disability Services, 3101 Burge Hall (335-1462), and then go to the Chemistry Center, Room E225 CB. (See also: www.clas.uiowa.edu/faculty/teaching/classroom_p&p/disabilities.shtml)

Complaints
Complaints and appeals regarding this course, its instructors, or TAs can be filed with the Departmental Executive Officer at the Department of Chemistry administrative offices, Room E331 CB (335-1350).

Academic Misconduct
• The College of Liberal Arts & Sciences academic misconduct policy is available at: www.clas.uiowa.edu/students/academic_handbook/ix.shtml#1
  Academic misconduct may result in a grade reduction and/or other serious penalties.
• Examinations: You are expected to work alone. The instructors will employ statistical software to examine student answer sheets to identify copying on exams – cheating will not be tolerated.
• MasteringChemistry (homework): You are expected to individually and independently complete the homework.
• Laboratory: Data collection is a group activity (2 or 4 students). All data is expected to be collected in the laboratory. Use of data not collected by the author of the report, use of data not acquired during the lab period, and use of fabricated data will be considered academic misconduct. Case study, pre-lab, and lab questions may be discussed in groups, but must be answered individually.
• In-Class Quizzes: Quizzes in class will be done in groups. You are expected to work together as a team to come to the correct answer. There will only be discussion allowed within groups

Policy of the College of Liberal Arts & Sciences
This course is given by the College of Liberal Arts & Sciences. This means that class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College of Liberal Arts & Sciences. Students wishing to add or drop this course after the official deadline must receive the approval of the Dean of the College of Liberal Arts & Sciences. Details of the University policy of cross enrollments may be found at: www.uiowa.edu/~provost/deos/crossenroll.doc

Grading
Semester grades will be based on three 90 minute unit exams, one 120 minute final exam, homework, quizzes, Case Study / Laboratory work, and Discussion Section in-class work; plus & minus grades will be awarded.

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<th>Grade</th>
<th>% of Class</th>
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<td>A</td>
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Average GPA = 2.5 out of 4.0

• 4 Exams = 600
• Case Study & Lab Experiments = 200
• MasteringChemistry homework = 120
• Discussion Section = 70
Total = 990
Laboratory Component Requirements and Make-up Information

A passing grade in CHEM: 1120 requires successful completion of the Case Study / Laboratory portion of the course. This means: (i) you must receive at least 50% of the Case Study / Laboratory points, and (ii) you must complete at least five of the six laboratory experiments. If a Laboratory is missed owing to illness, family emergency, or other qualifying excuse, a Laboratory Make-up Request must be submitted to Professor Owen as soon as possible. **Makeup periods will be announced.** A course grade of Incomplete may be assigned if it is impractical to make up more than one excused laboratory absence.

Examinations

There are three 90 minute unit exams and one 120 minute final exam. Students should bring their University ID, and a basic scientific calculator, to each exam. Graphing calculators, programmable calculators or data transmitting devices (e.g., PDA, laptop, cell phone) will not be allowed in the examination room. Room assignments will be announced in class and listed on the ICON CHEM: 1120 website.

Exam #1: Wednesday, June 24, 7:00 – 8:30 PM – Rm. TBD – Ch. 14 & 21, CS 8
Exam #2: Wednesday, July 8, 7:00 - 8:30 PM – Rm. TBD – Ch. 13, 16 & 17, CS 9 & 10
Exam #3: Wednesday, July 22, 7:00 – 8:30 PM – Rm. TBD – Ch. 19, 20 & 22, CS 11 & 12
Final Exam: Friday, August 7, **7:30 – 9:30 AM** – Rm. W128 CB – Ch. 18, 23 & 24, CS 7

*Exams will not be re-scheduled to accommodate vacation or other travel plans.*

Make-Up Examinations

If an exam is missed owing to an illness, family emergency, or other university recognized excuse, to qualify for a make-up exam, written documentation must be submitted to the Chemistry Center no later than 3 days after the missed exam. The student should also contact Professor Owen. Be aware that the instructors consider the use of dishonest or falsified excuses to be a violation of the University honor code and such situations will be considered to be cheating.

Discussion Activities

There will be activities and quizzes given for every chapter covered in the course which will be administered in discussion. If you miss discussion you will not be able to earn these points. Students will work both individually and in groups to complete the activities and quizzes. The purpose of these quizzes is for the students to evaluate their understanding and comprehension of the material as the course moves at a very fast pace, and as an opportunity to have experience with questions that will be written in the style and format of exam questions. These activities and quizzes will be administered in a variety of methods including the online resource, Learning Catalytics.

Learning Catalytics

Learning Catalytics is a tool in which you can answer questions posed by the instructor or TA in real-time, in-class on your laptop, tablet or mobile device. It can be accessed via the Mastering Chemistry site and will be demonstrated in class on the first day. This tool will be used from time to time throughout the course session.
Guidelines for Lab Performance

Punctuality: Every 5 minutes results in a loss of 2 points. If a student is 15 minutes late they cannot do the lab unless a special permission is obtained from Prof. Owen

Preparedness: 1 – 3 questions or actions that show a lack of preparation for the lab – ½ point each (questions like “what should I do next?”) For each additional question –1 point (No points should be taken off for asking a safety related question)

Participation: –1 point if only occasionally contributing to group activities
–2 point if contributing very little
–3 points if just standing there and not even giving suggestions.

Disruption: –1 to 5 depending on how disruptive the student is (An example of this would be completely preventing a group from finishing by doing the experiment “his/her” way despite what the correct procedure outlines)

Safety: –0.5 point for each goggle reminder
–1 point for more serious safety violations (spilling chemicals, leaving an unattended Bunsen burner, etc)

Distribution of Lab Points:
1) 5 points for Lab Performance (see above)
2) 18 points for each Lab Report
3) 5 points for each Case Study activity
4) 10 points for each PreLab activity
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Lectures &amp; Exams</th>
<th>CS &amp; Lab</th>
<th>Mastering Chemistry</th>
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<tbody>
<tr>
<td>June 15</td>
<td>M</td>
<td>Ch. 14 – Kinetics</td>
<td>Intro/Syllabus</td>
<td>Check Deadlines in Mastering Chemistry</td>
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<td>16</td>
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<td>17</td>
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<td>Ch. 14 – Kinetics</td>
<td>Safety Quiz</td>
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<td>18</td>
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<td>Ch. 21 – Nuclear Chemistry</td>
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<td>22</td>
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<td>Ch. 21</td>
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<td>Ch. 13 – Properties of Solutions</td>
<td>Experiment 8</td>
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<td>Case Study 12</td>
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<td>Ch. 22 – Chemistry of Nonmetals</td>
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<td>Aug. 3</td>
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<td><strong>Final Exam – Ch. 18, 23 &amp; 24, CS 7 – (7:30-9:30 am W128 CB)</strong></td>
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Teaching Policies & Procedures

Administrative Home
The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook.

Electronic Communication
University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

Accommodations for Disabilities
A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Fraud
Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Academic Fraud section of the Student Academic Handbook.

CLAS Final Examination Policies
Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site. *These CLAS policy and procedural statements have been summarized from the web pages of the College of Liberal Arts and Sciences and The University of Iowa Operations Manual.